of Laryngology, July 1, 1898 (*Annales des Maladies de l'Oreille, du Larynx, etc.*, August, 1899).

A man, aged sixty-four years, began to experience difficulty in swallowing three years before, and, the trouble increasing, frequent dilatations with sounds were necessary. Within the last three months gradual increasing hoarseness intervened. In probing the œsophagus the instruments of large calibre encountered an obstacle about the level of the bifurcation, while smaller sounds reached to the cardia without difficulty. The laryngoscopic image showed both vocal bands in the cadaveric position, whether during expiration or phonation. The patient died suddenly of a hemorrhage of the stomach after probing. The autopsy revealed a carcinoma of the œsophagus, extending to the posterior wall of the trachea and completely paralyzing the two recurrents.

Primitive Medullary Carcinoma of the Epiglottis.—This case was reported by DR. FLATAU (*Annales des Maladies de l'Oreille, du Larynx, etc.*, August, 1899), and when first seen was limited to the epiglottis, concealing the valleculæ and a portion of the base of the tongue. It had begun three or four months after the existence of a sensation of a foreign body, difficulty in swallowing, and occasional slight pains. The growth was removed by Professor Gluck, who performed subhyoid-pharyngotomy, preceded by preliminary tracheotomy. The base of the tongue was found sufficiently involved to make it necessary to extract a portion of the hyoid bone. Fourteen days later the patient was taken with intestinal hemorrhages, the cause of which remained undetected.

Adenocarcinoma of the Nose.—At the recent meeting of the American Laryngological Association, DR. JAMES E. NEWCOMB, of New York (*Medical News*, July 1, 1899) reported a case in a female subject, aged sixty-one years, in which reproduction of tissue had followed intranasal removal. Recurrence had twice followed, in which a radical operation seemed necessary. Six other cases were mentioned to be added to those enumerated in a table prepared by Dr. Hopkins.

Suppuration of the Accessory Sinuses of the Nose.—By far the most valuable practical contribution to this subject which has been published of late is an exquisitely illustrated article by DR. JACOB E. SCHADLE, of St. Paul, Minn. (*St. Paul Medical Journal*, January and February, 1899), on the etiology and diagnosis of empyema of the accessory sinuses of the nose.

Eight photographic plates from the wet-preparation admirably illustrate the subject, the text of which will hardly bear condensation in the few paragraphs we could devote to it, so that we must refer our readers to the original; but we may say that great stress is laid upon the proper appreciation of the normal and abnormal anatomy of the parts before disease as well as after it.

Nasal Epilepsy.—E. MEYER (*Annales des Maladies de l'Oreille, du Larynx, etc.*, August, 1899) reports this case in a man, thirty-two years of age, who had been affected since he was sixteen years old. The paroxysms occurred at irregular intervals of from three to ten weeks, and each paroxysm was preceded by an abundant purulent discharge from the left nasal passage. An empyema of the maxillary sinus was recognized, which was discharged by trephining the anterior wall and followed by the ordinary after-treatment. Since this time the epilepsy has not reappeared, but Dr. Meyer was not sure a cure had been definitive.

Fibroma of the Nasal Orifice.—This unusual case, reported by DR. ALEXANDER (*Annales des Maladies de l'Oreille, du Larynx, etc.*, August, 1899), occurred in a female, fourteen years of age. It occupied the left wing of the nose and nearly filled one-half of the nasal passage.

Neurasthenia in Certain Affections of the Nose and Throat.—DR. MARCEL NATIER (reprint from *La Parole*, 1899) reports two cases—one due to an elongation of the uvula and disappearing after section of the same, and another caused and kept up by an artificial ulceration on the nasal septum of the right side. Both occurred in female subjects.

PATHOLOGY AND BACTERIOLOGY.

UNDER THE CHARGE OF

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The Fate of Embryonic Cells Implanted in the Bodies of Adult Animals.—BIRCH-HIRSCHFELD and GARTEN (*Beiträge zur path. Anat. und allg. Path.*, Band xxvi. No. 1, p. 132).

These experiments consisted in the introduction of embryonic cells into an adult animal of the same species, but differed somewhat from previous attempts. Very young embryos were used, as their proliferation capacity is much greater. Undifferentiated cells were used to see if there would occur a later differentiation. No whole embryos or even whole limbs were used, but teased cells, that they might be better nourished and that different tissues might be reproduced. For implantation a tissue was sought of which the nourishment would be abundant, and which could easily be differentiated from the implanted tissue. For these reasons the liver was selected.

The embryos were teased out in salt solution, which was then injected under antiseptic conditions into the portal vein. Death followed after some days. Then another method was tried. After laparotomy the solution was repeatedly injected directly into the liver. Thus the exact place was noted, and later could be easily excised. By careful technique the same animal was sometimes operated on three or four times. Rabbits and their embryos were used first, then chickens, goats, salamanders, and frogs. Positive results were obtained in more than one-fourth of the cases.

Controls were made by injecting embryonal cells which had been killed by boiling.

The commonest result was the formation in the liver of cartilaginous nodules up to the size of a pea. Embryos of the same size and age as those injected showed no cartilage whatever, therefore a differentiation after implantation is argued.

The younger the tissue injected the more positive the results. Older cells are rapidly absorbed. Calcification was sometimes found, and often showed absorption when the surrounding capsule was not very firm.

Cartilaginous nodules were found in the periphery of the lung, evidently due to embolism. They showed the same structure as the growths in the liver.

In addition to the injection of embryonic cells, an attempt was made experimentally to change the condition of the liver. After two chickens had been injected a sterile platinum wire was passed through the liver, and silver electrodes at the ends sewed to the abdominal wall. Through this wire an electric current was passed five minutes each day sufficiently strong to warm the wire. In these cases the proliferation was much further advanced. Beside cartilage there were found adenoid tissue, epithelial-like cells, and pigmented epithelium.

Giant-cells were sometimes found, which the writers believe were formed as the result of the irritation of foreign bodies (injected material). These apparently were formed from the endothelium of the capillaries. They may also arise from various fixed cells, as shown by their origin from granulation cells in the periphery of a different nodule. Owing to lack of mytosis the writers regard them as arising from the confluence of many cells.

Conclusions are drawn as follows:

The tendency to proliferation is very different in embryonic and adult cells. A functional stimulus is necessary for cell-preservation and growth.

Embryonic cells differentiate after implantation. This is a specific property of the cell, and is not dependent on the demands of the entire adult organism.

A permanent existence for the new growth has not been demonstrated by these experiments. They are not tumors, as they are not progressive. But while Cohnheim's theory is not confirmed, it is not disproved.

The positive results of the experiments have been these:

1. The injection of teased embryonal tissue into the adult liver yields a tumor-like new-growth in the liver and lung.

2. In chickens, some weeks after the implantation of one to five-days' old embryos, there has arisen in the liver adenoid tissue, epithelial-like cells, and pigment cells.

3. The best results follow when the liver is periodically stimulated.

4. The implanted cells undergo further differentiation.

5. The growth is not permanent. After weeks or months there occurs encapsulation, regressive metamorphosis, such as calcification, etc., and finally sequestration and absorption by surrounding tissue.

Chronic Fibrinous Bronchitis.—SCHMIDT (*Centralblatt f. allg. Path. u. path. Anat.*, Band x. Nos. 11 and 12. The clinical record of this case is interesting from the point of etiology. The patient, aged fifty-two years, was suddenly chilled seventeen years ago after a fright from a burnings theatre; then followed nose-bleed and cough, with expectoration of slimy sputum, but no casts. Eight years ago there were daily chills, with coughing in the morning. At present there is expectoration of branched plugs, with a peculiar feeling in the right lung. Lying on this side would cause a "kochen" in the lung. The expectoration is without effort, and in the last four weeks has occurred daily. There is some dyspnœa, and for the last six months gravel in the urine. The patient is nervous and subsists largely on a meat diet. Eczema is present on the hands and elbows. There is a faint tendency to obesity.

The plugs found in the expectoration swell in dilute acetic and hydrochloric acids, and are completely digested in a few hours at 37° C., hence the writer concludes they are mostly fibrin. They are light yellow, elastic, soft, slippery, the size of a goose-quill, and may reach a length of 12 cm. They number ten to fifteen a day, and show blood at the small ends, but never in profusion. Some of these smaller ends are actual blood-cylinders of fused corpuscles, which the writer thinks are due to congestion, with capillary thrombosis and secondary changes of red blood-corpuscles into hyaline bodies.

Cholesterin is abundant, especially near what Schmidt calls corpora lecithinoidea, which latter resemble in appearance and chemical action corpora amylacea, but there is no demonstrable nucleus and no radiate striations. The cylinders have parallel glistening sides, open ends, and their length is in inverse proportion to their width. The wall may be thickened, the centre a mere capillary tube or entirely obliterated. The contents of these tubes are transparent, and may include erythrocytes, leucocytes, and mucous corpuscles or their nuclei.

The above-mentioned corpora lecithinoidea are also within the tubes, may be united with the wall of the latter, and at the ends may even fuse with it. Hence they have the same genesis.

The cylinders are from 5μ to 30μ (mikrons) in width, and are commonest in the finest divisions of the casts. They are surrounded by many epithelial cells, filled with fat, much detritus, cholesterin, and concentrically striated lecithin-like bodies. Both bodies and tubes give no reaction with iodine. Under ether the tubes become lax, swell up, and undergo a sudden, complete destruction, with loss of refraction. Chloroform and carbon disulphide give the same results. Acids cause no change. From these reactions and the invariable presence of blood and epithelial cells and detritus, Schmidt calls the tubes "lecithinoidschlauche" and the smaller bodies "corpora lecithinoidea." The tubes he believes to arise from a peculiar change of hyaline capillary thrombi.

From his study of the case Schmidt calls attention to the following points:

The association of chronic fibrinous bronchitis and metabolic anomalies, such as meat, diet, obesity, gravel, eczema.

Congestion of lungs and heart degeneration, with emphysema and atheromatosis, and the localization of the process in the right lung.

Microscopically noteworthy are the hyaline blood-cylinders, the corpora lecithinoidea (like the prostate bodies), soluble in ether, chloroform, and carbon disulphide, the lecithin-like tubes with similar reaction. The presence of fatty epithelial cells is a favorable point in prognosis. The coagula are composed mostly of fibrin.

Fragmentation of the Myocardium.—STRICKEISEN (*Ziegler's Beiträge*, Band xxvi. Heft 1, p. 105–130).

One hundred and fifty cases of death by violence were investigated with reference to fragmentation of the heart muscle-fibres.

The most frequent location was in the papillary muscles and wall of the left ventricles; then the septum and the papillary muscles and trabeculæ of the right ventricle. The auricles were never affected.

The fracture was often found near the nucleus. Cell ruptures predominated, but separation of cells occurred. The intercellular tissue was normal. Hemorhages were never observed. As for the evidence of other pathological processes, fatty degeneration was rarely found in cases of fragmentation, but pigment atrophy was a predisposing cause.

In the hundred and fifty cases fragmentation was found in 56.6 per cent. They included phthisis, acute peritonitis, pneumonia, carcinoma, typhoid, sepsis, etc. Two cases of tetanus showed marked fragmentation.

The main cause lies in the violent contraction of the heart-muscle, as fragmentation was very frequently found in death by asphyxia. Its absence in fatty degeneraton is explained by a weakened heart, which cannot contract to the point of rupture and fragmentation of fibres. Pigment atrophy, on the contrary, leads to increased frangibility of the muscle elements.

A primary weakening of the heart-muscle can be excluded by the very frequent occurrence of fragmentation in cases of accidental death.

Chemical and bacterial causes have been urged, but anatomically the fragmentation is the same, and the interstitial changes are wanting.

If it occurred long before death there would be changes in the fibres as well as interstitial changes. On the contrary, the ruptured ends match and seem normal.

As to the medico-legal question of fragmentation as a cause of sudden death, the writer answers it in the negative. Such cases usually follow great efforts or acute infectious diseases. Probably the heart weakens, vascular pressure is diminished, and asphyxia phenomena follow with fragmentation. This may explain sudden deaths at the very beginning of chloroform anæsthesia. *Fragmentation myocardii* is strongly denied as the actual cause of any sudden death.

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